ON AN UNDESCRIBED SPECIES OF *ACTINOTUS* FROM EASTERN AUSTRALIA.

By R. T. Baker, F.L.S., Curator, Technological Museum.

(Plate iv.)

Actinotus Paddisoni, sp.nov.

A prostrate annual with perennial base, having strong, wiry, slightly pubescent, dichotomous branches which measure one or two feet in length, curving upwards at the ends and radiating from the perennial base.

Leaves not numerous, stem-clasping, solitary or rarely two at the same node, sometimes over 2 inches long, 3-partite or 2-partite, with linear cuneate or oblong linear, nearly acute segments, 1 to 3 lines long, entire or 2- or 3-lobed, almost glabrous above, a few scattered silky plumose hairs on the under surface especially on the midrib and thickened edges.

Umbels dense, on stout peduncles measuring 2 to 5 lines long, depressed on the peduncle. Involucre radiating to 9 lines when in flower and to over 1 inch in diameter when in fruit, consisting of 12 to 20 lanceolate, acute bracts united for about one-half their length, covered on both sides with silky plumose hairs, nerved or striated from the base.

Flowers very numerous, almost sessile; pistillate flowers very few, hermaphrodite flowers predominating, often imperfectly developed, having also staminodia. Calyx divided into five acute

lobes covered with silky plumose hairs, inside glabrous. Petals none. Fertile stamens few, rarely 5 in each flower, mostly 2. Staminodia strap-shaped or linear, these often are 5 in number. Styles 2, shortly joined at the base, thick and short, clavate, curved inwards. Fruit nearly orbicular, *black*, glabrous or slightly ciliate on the ridges just below the calyx.

This plant was exhibited as probably new at the April Meeting of the Society in 1904; as since then more perfect data having been obtained, it is now described as new.

Dividing the known *Actinoti* into two divisions, *i.e.*, the erect and prostrate, this species would be classed with the latter, for Mr. Paddison informed me that, "from the centre the stalks radiate in every direction and lie on the ground slightly turned up at the base," and also, "that it was growing in rather stony ground made up of red loam, sand and stone."

As a prostrate plant its systematic classification becomes easy, for only two or three of the species are placed as decumbent and none actually as prostrate.

The umbels and involucre have the facies of those species with erect habit, the bracts of the involucre, however, being a little smaller, but much larger than those of *A. Gibbonsii*, F.v.M., and having a different tomentum from any described species.

Like *A. Helianthi*, Labill., *A. minor*, DC., *A. bellidioides*, Benth., and *A. glomeratus*, Benth., it has no petals, the absence of which organ, along with other features, separates it from *A. leucocephalus*, Benth., *A. rhomboideus*, Benth., and *A. Forsythii*, Maiden & Betche. From *A. Schwarzii*, F.v.M., it differs in the length of peduncles and pedicels, habit and floral characters.

When herbarium specimens of this Flannel-flower are placed in juxtaposition with those of described species, macroscopical differences are at once apparent; and when examined microscopically these are still further emphasised.

The numerous hairs on the sepals are plumose as well as those occurring on other parts of the plant.

Some of the floral structures are perhaps not so regular or rather constant as pertain in other species. Only a few of the flowers

are pistillate, the remainder having both stamens and pistil as well as staminodia or pistil and staminodia. These staminodia are strap-shaped and in some flowers are regularly 5 in number, so that they were at first regarded as linear petals, but their absence in a few flowers having only a pistil, led to their finally being determined as staminodia,—organs not recorded in connection with any other *Actinotus*, although Bentham (B.Fl. iii. 369) mentions under *A. bellidioides* "petals none (or sometimes linear ?); and probably it was organs similar to those now shown to occur in this species that he found in his species, and was in doubt as to their true significance.

In no instance were *five* perfect stamens found in a flower, although very many were examined, the usual number being two, along with staminodia. It was thought at first that the anthers had become detached, but the evidence was opposed to this conclusion, as the filaments bearing the anthers tapered upwards to a fine point to the back of the anther, and no such similar filaments could be found, the other organs, the staminodia, expanding upwards and being quite obtuse at the top, and wanting in proof that they had ever performed the function of filaments.

The disc mentioned in connection with other species is entirely absent in the flowers of this plant; the pistil is bifurcated almost from the base, the arms being short and comparatively thick.

The above floral features alone differentiate the species from the more recently described species such as *A. Gibbonsii*, F.v.M., *A. Schwarzii*, F.v.M., and *A. Forsythii*, Maiden & Betche, and as well as from those species enumerated in the 'Flora Australiensis' (Vol. iii. p. 367). The junction of the strongly-nerved involucre bracts for one-half their length, and the concave base, are also good distinguishing features of the species. *A. Gibbonsii* is a much more delicate plant with greener leaves, smaller sessile umbels and bracts and different floral organs and tomentum.

In botanical sequence it might be placed between *A. bellidioides* and *A. glomeratus*, the staminodia connecting it with the former, although it has not much in common with the latter.

It is named after Mr. A. Paddison of New Angledool, its discoverer, who has devoted much time to studying the flora of that arid part of Australia, and who has also been instrumental in bringing other botanical novelties to light.

EXPLANATION OF PLATE IV.

Fig. 1.—Branch.
Fig. 2.—Hermaphrodite flower (part of), showing stamens and staminodia.
Fig. 3.—Pistillate flower (part of).
Fig. 4.—Pistil.
Fig. 5.—Individual flower.
Fig. 6.—Seed.
Fig. 7.- Plumose hair.

All enlarged but Fig. 1.